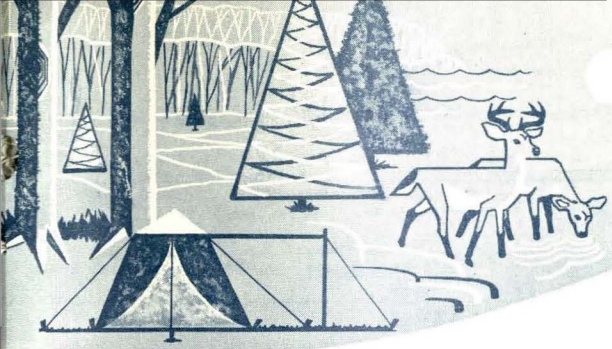

U. S. FOREST SERVICE

RESEARCH NOTE NC-74

NORTH CENTRAL FOREST EXPERIMENT STATION, FOREST SERVICE—U.S. DEPARTMENT OF AGRICULTURE

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New Farm Fencing Declines — Use of Treated Posts Up

ABSTRACT. — Describes the amount and type of farm fencing installed on commercial farms in the Central and Appalachian States during the years 1963-1966.

OXFORD: 831.51:764(74/77)

The changing pattern of farming, advances in the chemical treatment of wood, and a general decrease in the local availability of naturally durable tree species have affected the farm market for wooden posts. The increasing use of purchased rather than homegrown posts and a corresponding increase in the use of commercially treated posts was reported in a 1956 study by Gill, Hundley, and Clarke.[1] The same study indicated that the operators of large farms purchased a greater percentage of their posts than did persons with smaller farms. Thus, by 1956, it was evident that increases in farm size and the shortage of naturally durable tree species were helping the fence post market.

Reported here are more recent statistics on the types and amounts of fencing constructed on commercial farms[2] in two regions and what these statistics may imply in terms of the future demand for wooden posts used on farms.

[1] *Gill, T. G., Hundley, N. G., and Clarke, J. T., Market survey of treated wood products used in a nine-State area. Washington, D.C.: Timber Eng. Co., p. 12. 1956.*

[2] *Commercial farms are defined for this study as farms having total farm product sales of $2,500.00 or more in 1964.*

The Study

Statistics on fences were collected as part of a survey of farm structures done in cooperation with Doane Agricultural Service, Inc. Two groups of States were surveyed: the Central Region, including Illinois, Indiana, Iowa, and Missouri, and the Appalachian Region, including Alabama, Delaware, Georgia, Kentucky, Maryland, New Jersey, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, and West Virginia.

More than 1,300 operators of commercial farms in the 17 States were contacted by mail during the summer of 1966. The operators were members of the Doane Farm Panel, a group selected by stratified sampling techniques to represent commercial farms. Panel members were asked to indicate the amount of each of ten basic fence types constructed on their farms during the period January 1963 to July 1966.

Amount and Type of Fence Constructed on Commercial Farms

Commercial farm operators erected an average of 710 lineal feet of fence per year during the 3½-year study period. Assuming a 15-foot spacing between posts, each farm used about 47 fence posts per year. This amounted to about 0.18 posts per acre of commercial farmland each year over the entire study area. Farms in the Central Region used an average of 0.21 posts per acre, per year, as compared to 0.15 for the Appalachian Region (table 1).

Table 1. — *Estimated amount of fence used on commercial farms by State and region, 1963-1966*

State	Total fence erected per year: Length	Total fence erected per year: Posts	Fence erected per farm per year[1]: Length	Fence erected per farm per year[1]: Posts	Posts per acre per year
	Thousand feet	Number (Thousands)	Feet	Number	Number
CENTRAL REGION					
Illinois	124,333	8,289	1,230	82.0	0.29
Indiana	51,804	3,454	780	52.0	.22
Iowa	72,174	4,812	560	37.3	.15
Missouri	79,930	5,329	1,090	72.7	.20
Total	328,241	21,884			
Average			890	59.3	0.21
APPALACHIAN REGION					
North Carolina	34,270	2,285	430	28.7	0.20
Ohio	25,720	1,715	390	26.0	.12
All other States in region[2]	190,360	12,691	620	41.3	.16
Total	250,350	16,691			
Average			560	37.3	0.15

1/Based on average 15-foot spacing between posts.
2/All other States were weighted as a group since the sample size in individual States was insufficient for separate weighting.

Barbed wire fence with wood posts was the most frequently erected of the ten types, accounting for about 38 percent of all fencing reported. Woven wire fence with wooden posts (28 percent) and barbed wire fence with a combination of wood and metal posts (15 percent) ranked second and third in popularity. These three most popular types accounted for more than 80 percent of all farm fencing.

Estimated Numbers of Wood and Metal Posts

The numbers and percentages of wood and metal posts were estimated on the basis of type of fence. In 6 of the 10 fencing types, it was clearly specified whether posts were made of wood or of metal. In the other four, however, there was some doubt as to the numbers of posts made of wood and metal. These included the fences that utilized a combination of wood and metal posts, and the "unspecified" category.

Within the 17-State area about 66 percent of all farm fencing had wooden posts, 14 percent had metal, and 19 percent were in the "combination wood and metal" and "unspecified" categories (table 2). Assuming that fences in the last two categories included wood and metal posts in equal numbers, the ratio of wood to metal was about 3 to 1 (table 3). About 88 percent of all posts used in the Appalachian Region were wood, compared to only 67 percent for the Central Region.

Summary and Discussion

All told, about 38.5 million posts were used annually on commercial farms in the 17-state study area. This figure includes reused posts as well as new ones if they were used in new farm fences. Farms in the Central Region used more posts per farm and per acre of commercial farmland than did those in the

Table 2. — *Estimated total length of fence constructed by type of posts used, 1963-1966*

Type of post	Central Region		Appalachian Region		Total	
	Amount of fence		Amount of fence		Amount of fence	
	Thousand feet	Percent	Thousand feet	Percent	Thousand feet	Percent
Wood	590,711	51	750,412	86	1,341,124	67
Metal	209,067	18	81,453	9	290,521	14
Wood and metal	329,399	29	18,946	2	348,345	17
Unspecified	19,663	2	25,414	3	45,077	2
Total	1,148,840	100	876,225	100	2,025,067	100

Table 3. — *Estimated number of wood and metal posts used per year in two farming regions, 1963-1966*

Type of post	Central Region		Appalachian Region		Total	
	Posts[1/]		Posts[1/]		Posts[1/]	
	Thousands	Percent	Thousands	Percent	Thousands	Percent
Wood	14,576	67	14,717	88	29,292	76
Metal	7,307	33	1,973	12	9,281	24
Total	21,883	100	16,690	100	38,573	100

1/Based on 15-foot spacing.

Appalachian Region, although the difference between regions was much smaller on a per-acre basis. The type fence built varied with types of farming between States and regions.

Wood posts outnumbered metal by about 2 to 1 in the Central Region and by more than 7 to 1 in the Appalachian Region.

Comparing these newer statistics with those obtained by Gill, Hundley, and Clarke in their 1956 study[1] total fence post use in the four States of Illinois, Indiana, Missouri, and Ohio seems to be declining by about 5 percent per year. Changes in farming including increased farm and field size, increased use of mechanical equipment, and the trend to confinement housing for animals have contributed to this decline. The increased use of treated wood and steel posts, which have long service life, has also been a factor.

During the 12-year period of decline in total numbers of posts used, the number of posts treated by commercial wood preserving plants increased by over 40 percent. Since farm fencing is the dominant use of treated wood posts, it appears that treated posts are capturing more of a declining total farm market. As the total market continues to decline, and, given the extended service life of treated posts, major increases in production and use of treated posts will depend on securing other markets.

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